June 26, 2023

Karen Lalonde
Project Manager, Atlantic Region
Impact Assessment Agency of Canada
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Dear Ms. LaLonde,

Thank you for your letter of June 19, 2023, seeking additional information with respect to project components and activities for Project Nujio'qonik (the Project). With respect to marine terminal operations and the applicability of the *Physical Activities Regulations,* you requested further information on the following:

1. whether the Port of Stephenville is able to accommodate ships greater than 25,000 DWT without expanding the marine terminal;
2. the potential for ships greater than 25,000 DWT to be used for the Project;
3. details about the two temporary marine loading sites; and
4. details about the jettyless offloading system being investigated to minimize port development.

Responses

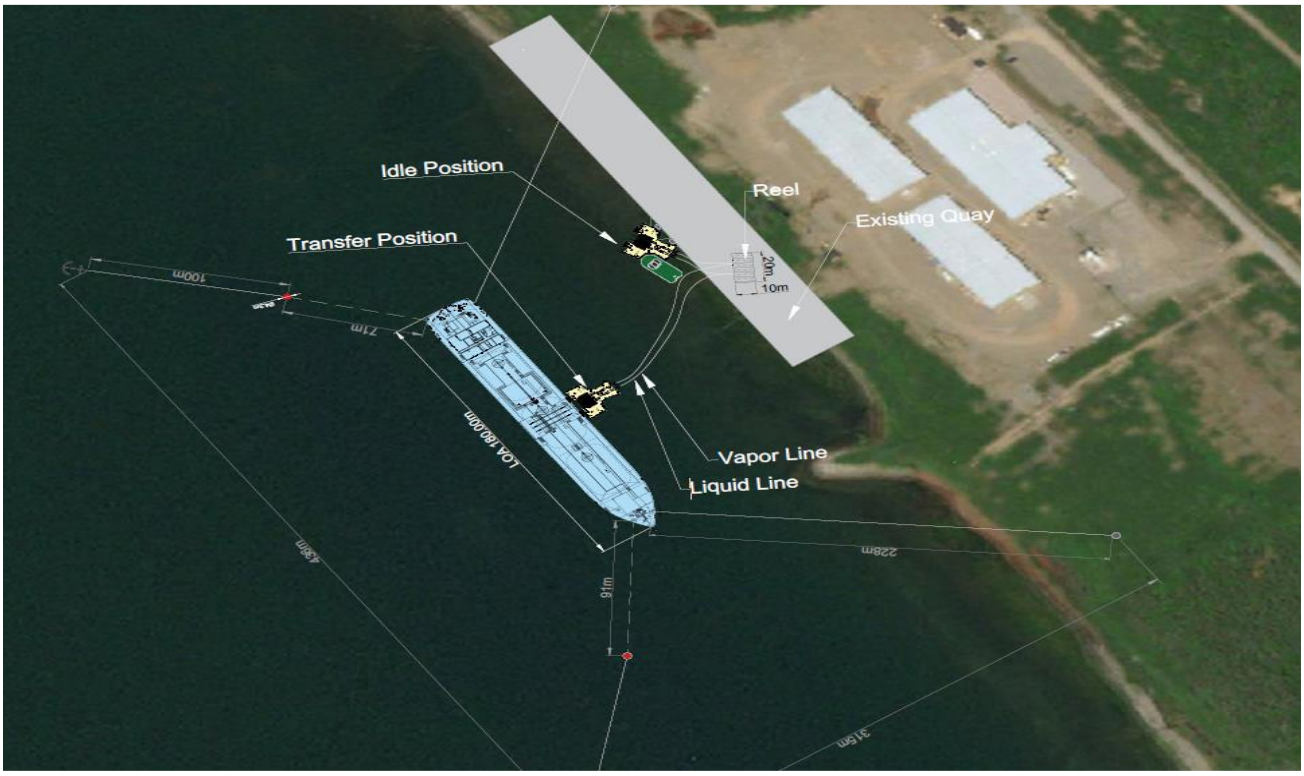
1) The Port of Stephenville routinely accommodates vessels larger than 25,000 DWT using existing infrastructure. Each year, bulk carriers offload road salt, construction supplies, and asphalt, while cargo vessels load scrap metal at the Port. The Port of Stephenville supports local fishing and aquaculture industries as well as Canadian Coast Guard operations. The Port of Stephenville was acquired by World Energy GH2 in May 2023. Routine operations at the Port will continue separately from Project Nujio'qonik.

2) There are no plans for the Project to export ammonia using vessels larger than 25,000 DWT. Please see attached specification sheet for details on vessels being considered for ammonia export. Project components such as wind turbine blades and electrolysers will be delivered by vessel to the Port of Stephenville, as determined by the supplier. The existing dock is 293 m x 20 m, with 7,500 m of asphalt paved dock area. The existing quay will be inspected and load rated to certify berthing and mooring load capacity.

3) The temporary marine landing sites are proposed at Aguathuna and West Bay, on the Port au Port Peninsula, to mitigate traffic interference and loading on local roads. A jetty will be constructed of clean rock fill from the shoreline seaward, to a water depth adequate to receive low-draft barges for delivery of the wind turbine

components from the Port and other bulk Project materials. Nominal barge size is 50 x 200 m. The Aguathuna landing site is a brownfield historic mining / quarry site that remains heavily disturbed.

4) The ammonia offloading system design remains under consideration. While options are being considered, the base case is the jettyless floating offloading system. With cryogenic hoses connected, these systems are floated to the vessel's side by tugs and secured to the vessel's hull with a specialized mooring system. A small number of dolphins or anchored mooring buoys fitted with quick release hooks will be required. The following schematics illustrate the jettyless mooring concept.



Your letter also requested the following information regarding hydrogen and ammonia storage and the Project area:

- Details about how hydrogen and ammonia will be stored. Please include the method of storage, quantities being stored, and approximate storage locations. If this has not yet been finalized, please provide details about all of the options being considered.
    - If storage within geological formations (e.g., saline aquifers or salt caverns) are being used or considered for the Project, provide additional information including the location(s) and methods to be used.
- A figure (or figures) outlining the project area, including the location of the hydrogen and ammonia plant, the two wind farm locations, and any associated infrastructure (e.g., submarine transmission cable, road works, hydrogen and ammonia storage locations, the marine discharge point for wastewater, the location of any marine works).

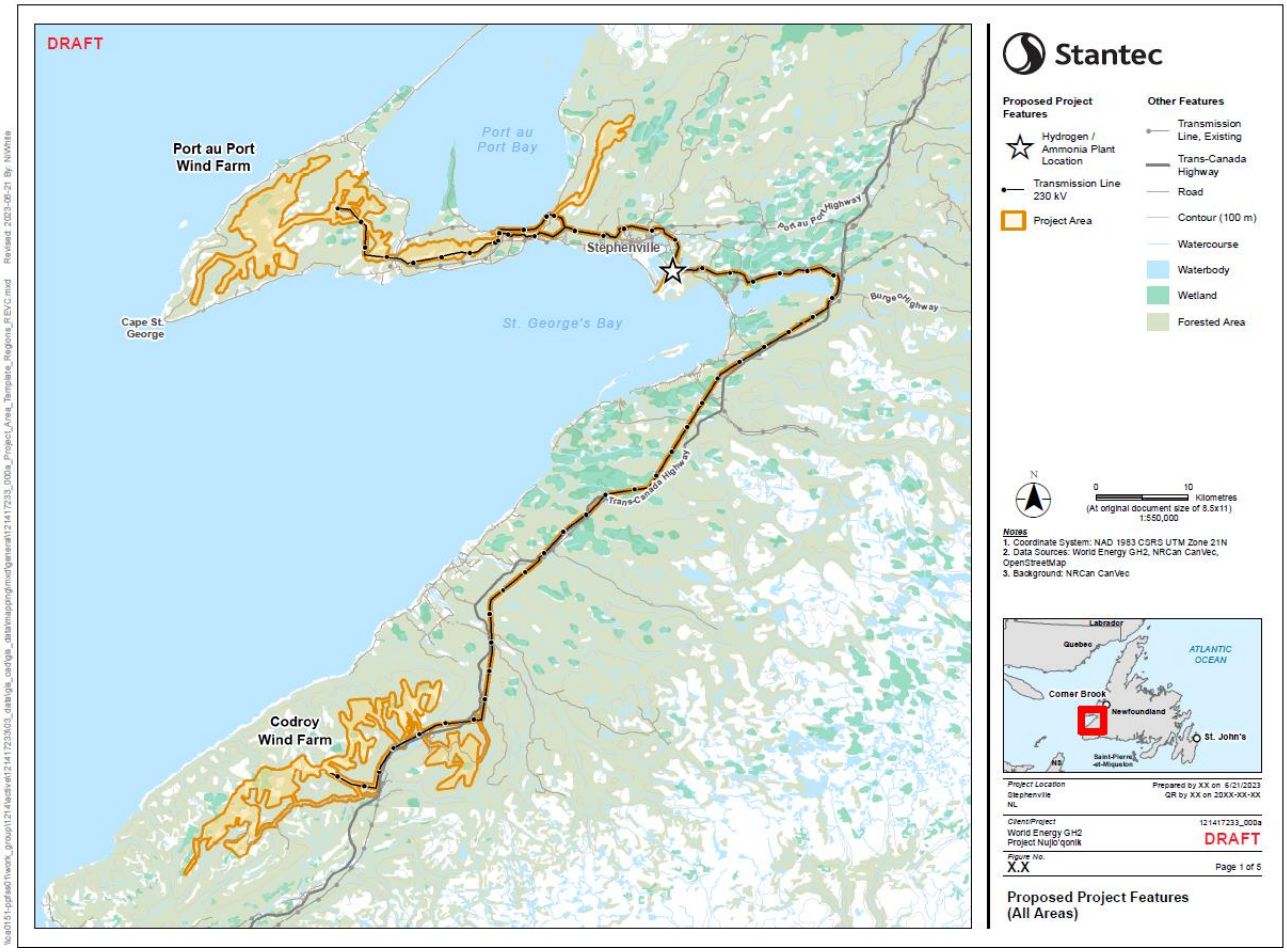
Response

Stationary above-ground storage for gaseous hydrogen generally consists of multiple cylindrical steel composite pressure vessel(s), which may be mounted in a frame and installed on a concrete foundation. The hydrogen is stored in a gaseous state in above-ground storage vessels that are able to store one ton of hydrogen. These containers are pressurized vessels that are constructed to meet pressure boundary codes (currently estimated to be approximately 193 bar, but ultimately sized depending on the format). The vessels require pressure and/or thermal relief valve design and sizing to provide adequate overpressure protection. These vessels are constructed to industry standards, such as the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code.

The total hydrogen storage amounts are subject to further engineering and safety studies, but are currently anticipated to be approximately 20 tons, which represents 60 tube-type ground-mounted storage units arranged in one level. The storage racks will be located in a secure area in the utility area of the plant. Each unit is approximately 8 m x 2.3 m x 2.3 m. The storage would likely be stacked two units high and two units deep, for an area of 40 m deep x 26 m wide x 3 m high (slightly depending on the storage pressure), requiring a footprint of 1,040 m^2.

The ammonia will be stored next to the ammonia production facility in an industry-standard double-walled, insulated tank with refrigeration to maintain temperatures. The tank is equipped with safety systems to suppress vapours. The ammonia storage tank is located within the plant boundaries and is currently sized to a footprint of 15,000 m^2. The total storage amounts are to be further refined in engineering studies, but are likely to fall within the 50,000 to 100,000 m^3 range at full capacity. There is space allocated for multiple tanks for expandability.

The figure below outlines the Project Area which includes the wind farms in the areas of Port au Port and Codroy, associated roads and collector lines; the transmission line and substations connecting the two wind farms to the hydrogen and ammonia plant; and the location of the plant at the Port of Stephenville.



We would be happy to discuss our response with you at your convenience.

Sincerely,

<Original signed by>

David Pinsent, M.Sc
Environment and Sustainability Manager

Attachment: Candidate ammonia vessel spec sheet